

REMARKS

Claims 1-23 are pending in the application. Claims 1, 2, 3, 4, 5, 7, 8, 10, 12, 13, and 14 are herewith amended. Claims 1-20 stand rejected. Claims 21-23 are newly added. Authorization to charge a fee is made below for the newly added claims.

Claim Rejections – 35 U.S.C. §102

Pursuant to paragraphs 2 and 3 of the Office Action dated November 9, 2004, claims 1-20 stand rejected under 35 U.S.C. §102(b) as being fully anticipated by U.S. Patent 5,867,621 (Luther). The Examiner asserts that Luther identically discloses “a multifiber ferrule 38 with a molded ferrule body having a smaller end face 48 with a plurality of bores 52 for receiving ends of optical fibers, at least one opening 50a for receiving alignment members and defining a longitudinal axis wherein the ferrule body comprises an integrally formed geometrical reference feature (a sloped planar surface) between the smaller end face 48 and a larger end face 48 [sic: 44] and *wherein the end face is not machined*. The surface of the smaller end face is perpendicular to the axis and the sloped surface is at [an] angle to the axis. *The sloped surface provides visual measurements for aligning purposes*. The sloped surface forms a bumper extending from the end face 48 of the ferrule. The ferrule body does have a recessed feature formed by *body elements 34* and end face 44. The geometrical reference feature is within an opening in the body and *is not altered through the useful life of the ferrule*. The planes defined by the end face 48 and sloped surface define an angle.” Office Action at pages 2-3 (emphasis added).

Applicants respectfully traverse the rejection. With respect to independent claims 1, 4 and 12, Luther does not identically disclose a multifiber ferrule comprising a molded ferrule body including a molded end face that is not machined subsequent to molding the ferrule body. With respect to independent claim 17, Luther does not identically disclose a method of forming a ferrule comprising molding a ferrule body having an end face and a geometry feature on an exterior surface of the ferrule body that is formed by molding and is not subsequently machined. Luther merely discloses a conventional MTP connector comprising a ferrule 38 having the structural configuration shown in Fig. 1 and described at column 2, line 66 through column 3, line 8. Nowhere does Luther expressly disclose or inherently suggest that the ferrule 38 is

molded and neither the end face nor a geometry feature provided on an exterior surface of the ferrule is machined subsequent to molding the ferrule. Applicants concede that it was well known in the fiber optic connector art at the time of the invention to mold a ferrule body for a multifiber ferrule. However, Applicants assert that it was not known in the fiber optic connector art prior to the present invention to mold an end face or a geometry feature on an exterior surface of a ferrule body *without machining* the end face or the geometry feature subsequent to molding the ferrule body. Thus, Luther does not identically disclose the multifiber ferrule of claims 1, 4 and 12 or the method for forming a ferrule of claim 17.

Furthermore, Applicants respectfully traverse the assertion in the Office Action dated November 9, 2004 that "The applicant agrees that Luther does not disclose the end face to be machined subsequent to molding (see remarks Page 9, lines 13-15)." Applicants do not agree. Rather, Applicants stated that "However, Applicants assert that it was not known in the fiber optic connector art prior to the present invention to mold an end face or a geometry feature on an exterior surface of a ferrule body *without machining* the end face or the geometry feature subsequent to molding the ferrule body." Applicants assert that Luther does describe machining the end face. Specifically Luther describes that "Connector 30 is a type of conventional connector known by the acronym of "MTP." U.S. Pat. No. 5,214,730 to Nagasawa et al. shows other types of MTP connectors, see FIGS. 9-11 and 26-30 therein, as well as describes a variety of multi-fiber ferrules that are used in such connectors. Connector 30 has fiber end 32 and ferrule end 34 opposite thereto. Ribbon fiber 36 enters fiber end 32 and the individual fibers are fed into ferrule 38 as is known (e.g., Nagasawa)" (column 2, lines 54-62). Notably, Nagasawa describes polishing the end face. See Nagasawa at column 1, lines 20-25 and 40-44, column 2, lines 24-25 and 46-48, column 10, lines 43-46, column 13, lines 27-29 and 37-38, and column 15, lines 5-7 for some examples of the numerous descriptions of polishing described in Nagasawa. Thus, Luther does not identically disclose the multifiber ferrule of claims 1, 4 and 12 or the method for forming a ferrule of claim 17.

Claims 2-3, 5-11, 13 and 18-19 depend directly or indirectly from patentable base claims 1, 4, 12 and 17, respectfully, and thus, are likewise allowable for at least the same reasons.

With respect to independent claim 14, Luther does not expressly disclose or inherently suggest a method for determining the angularity of a plane defined by at least a portion of an end face of a ferrule. In fact, Luther does not relate in any way to determining or measuring the angularity of the end face of a ferrule relative to a reference surface of any kind. Applicants

concede that it was well known in the fiber optic connector art at the time of the invention to utilize a reference plane defined by a truncated precision measurement pin to determine the angularity of the end face of a ferrule relative to the longitudinal axis of the pin. However, Applicants assert that it was not known in the fiber optic connector art prior to the present invention to utilize a geometric reference feature on an exterior surface of the ferrule body to determine the angularity of the end face. Thus, Luther does not identically disclose the method for determining the angularity of an end face of a ferrule of claim 14. Claims 15-16 depend directly or indirectly from patentable base claim 14, and thus, are likewise allowable for at least the same reasons.

With respect to independent claim 20, Luther does not expressly disclose or inherently suggest a method for forming a multifiber ferrule comprising molding a ferrule body comprising an end face and an integrally formed geometry feature proximate the end face wherein the geometry feature comprises a reference surface that is accessible for making visual measurements without the use of an interferometer having 3D capabilities, thereby eliminating the need for using a truncated precision measurement pin to determine the angularity of a plane defined by a region of interest on the end face. In fact, Luther does not relate in any way to determining or measuring the angularity of a plane defined by the end face of a ferrule relative to a reference surface of any kind. Applicants concede that it was well known in the fiber optic connector art at the time of the invention to utilize a reference plane defined by a truncated precision measurement pin to determine the angularity of the end face of a ferrule relative to the longitudinal axis of the pin. However, Applicants assert that it was not known in the fiber optic connector art prior to the present invention to utilize a reference surface defined by a geometry feature on an exterior surface of the ferrule body to determine the angularity of the end face. Thus, Luther does not identically disclose the method for forming a multifiber ferrule of claim 20.

Furthermore, Applicants submit that Luther does not identically disclose or inherently suggest that the sloped surface (stepped portion 46) formed between large end face 44 and small end face 48 *provides visual measurements for aligning purposes*. In fact, Luther does expressly disclose beginning at column 4, line 26 that "The various floating fits of components of the present invention are allowable because the crucial alignment mechanism of two opposed connectors is the relative locations of guide pin holes 50a, b on large end face 44. As long as ends 94 and 96 of guide pin 93 find the guide pin holes in opposed large faces, the connectors

will align with each other." Thus, the sloped surface does not provide visual measurements for aligning purposes because the connectors will align as long as the ends 94, 96 of the guide pins 93 find the guide pin holes 50a, b in the opposed large end faces 44 of the ferrules 38. Additionally, the *ferrule 38 of Luther* does not have a recessed feature. The sloped surface protrudes outwardly from the large end face 44 of the ferrule 38. MTP connector 30 has an outer body 40 that slides over inner body 42 at the ferrule end 34 of the connector. In particular, inner body 42 is a portion of the connector 30 and "ferrule 38 is located in inner body 42." Column 2 at line 66. Thus, ferrule 38 does not have a recessed feature formed by body elements 34 and end face 44 as the Examiner asserts.

For at least the reasons stated above, Applicants submit that claims 1-20 as presented herein are patentable. Accordingly, Applicants respectfully request the Examiner to withdraw the rejection of claims 1-20 under 35 U.S.C. §102(b).

With respect to newly added claims 21-23, it is respectfully submitted that *Luther* does not describe or suggest the recitations of claim 21. Moreover, *Luther* does not identically disclose a connection including the molded ferrules as recited in claim 21.

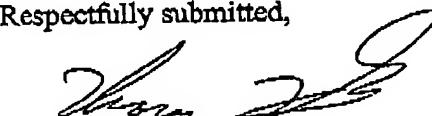
Claims 22-23 depend from patentable base claim 21, and thus, are likewise allowable for at least the same reasons.

CONCLUSION

In view of the foregoing amendments and these remarks, Applicants respectfully request the Examiner to withdraw the objection and the rejection to the claims and to reconsider the application. This Amendment is fully responsive to the Office Action and places the application in condition for immediate allowance. Accordingly, Applicants respectfully request the Examiner to issue a Notice of Allowability for the pending claims. Applicants encourage the Examiner to contact the undersigned directly to further the prosecution of any remaining issues, and thereby expedite allowance of the application.

This Amendment results in more independent and total claims than paid for previously. Accordingly, a fee is believed to be due. The Examiner is hereby authorized to charge any fee due in connection with the filing of this response, including any excess claims fee, to Deposit Account No. 19-2167. If a fee is required for an extension of time under 37 C.F.R. §1.136 not already accounted for, such an extension is requested and the fee should likewise be charged to Deposit Account No. 19-2167. Any overpayment should be credited to Deposit Account No. 19-2167.

Respectfully submitted,



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Dated: January 27, 2004